

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-8 and 11-19 are presently active; Claims 20-49 have been withdrawn by a Restriction Requirement; Claims 9 and 10 have been canceled without prejudice; and Claim 1 has been presently amended. No new matter was added.

In the Office Action, Claims 1-3, 5, and 9-11 were rejected under 35 U.S.C. § 102(b) as being anticipated by Jap. Pat. Application Publ. 08-031753 to Tashiro et al. Claims 4, 6-8, and 13-19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Tashiro et al in view of U.S. Pub. No. 2003/0151372 to Tsuchiya et al. Claim 12 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Tashiro et al in view of U.S. Pat. No. 5,441,596 to Nulty.

Applicants acknowledge with appreciation the courtesy of Examiner Arancibia and Supervisory Patent Examiner Hassanzadeh to interview this case with Applicants' representatives on October 4, 2006 during which time the issues in the outstanding Office Action were discussed as substantially summarized hereinafter and also on the Interview Summary Sheet.

Claim 1 presently defines that the first RF frequency used to ignite the plasma is higher in frequency than the second RF frequency used to sustain the plasma. This added feature is similar to previously presented Claims 6 and 7 which define respectively that the first RF frequency is at least two percent and ten percent higher than the second RF frequency.

The Office Action acknowledges on page 5, lines 8-10, that Tashiro et al do not expressly teach the features of Claims 6 and 7, and thereafter asserts that Tsuchiya et al's teaching of igniting a plasma at 60 MHz and sustaining the plasma at 13.56 MHz makes the features of Claims 6 and 7 obvious. Applicants respectfully disagree with this position as it would be applied to amended Claim 1 for the following reasons.

Regarding Tsuchiya et al, Tsachiya et al apply RF signals from separate RF sources to separate electrodes. Indeed, RF source 50 is applied to the substrate stage and RF source 4 is applied to an electrode separate from the substrate stage. Thus, there is no suggestion in Tsuchiya et al to apply power to a common electrode, much less to change the frequency on a common electrode. Indeed, the protective circuits described in numbered paragraph [0058] of Tsuchiya et al would likely not provide protection at two different frequencies, as merely starting both power sources at the same time on two different electrodes creates a “critical error” as explained therein.

Furthermore, matching elements 41 and 51 in Tsuchiya et al are each respectively designed for VHF and HF frequency operations and would not be expected to match the disclosed frequency change in Tsuchiya et al from VHF to HF, if the change in frequency were to be made on a single electrode, as claimed. Lastly, with regard to Tsuchiya et al, changes to make Tsuchiya et al a single electrode system would render Tsuchiya et al unsuitable for its intended purpose of using RF waves of different frequencies at the same time. See numbered paragraph [0002] of Tsuchiya et al.

Regarding Tashiro et al, Tashiro et al teach a change from a low starting frequency to a higher operating frequency. Therefore, a change in frequency from VHF to HF (i.e., a change to lower frequency) is contrary to that disclosed in Tashiro et al. Furthermore, Tashiro et al teach in numbered paragraphs [0003] – [0007] that higher frequencies increase the deposition rate of “good amorphous silicon” thereby motivating one of ordinary skill in the art at the time of the invention to change frequency to higher values in order to increase production rates and lower manufacturing costs, as explained therein.

Thus, for all these reasons, one of ordinary skill in the art at the time of the invention would not have been motivated, especially when considered in view of the advantages taught by Tashiro et al for using higher frequency operation and when considered in view of the

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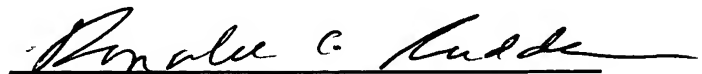
purpose of Tsuchiya et al to use RF waves of different frequencies at the same time, to change the frequency of operation from a high frequency to a lower frequency, as defined in Claim 1.

Hence, it is respectfully submitted that Claim 1 and the claims dependent therefrom patentably define over Tashiro et al and Tsuchiya et al.

Consequently, in view of the present amendment and in light of the above discussions, the outstanding grounds for rejection are believed to have been overcome. The application as amended herewith is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Steven P. Weihrouch
Attorney of Record
Registration No. 32,829

Customer Number

22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)

Ronald A. Rudder
Registration No. 45,618